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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/322,472	05/28/1999	JOYDIP KUNDU	ORA99-04(OID)	8046

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EXAMINER

VAUGHN JR, WILLIAM C

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/322,472.

Applicant(s)

KUNDU ET AL.

Examiner

William C. Vaughn, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-67 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Action is in regards to the Amendment and Response received on 18 April 2005.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 April 2005 has been entered.

3. The application has been examined. **Claims 1-67** are pending. The objections and rejections cited are as stated below:

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-67 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Applicant's specification lacks the proper teachings that are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Claim 1 recites accessing, by a member node, the cluster definition on the shared repository, regardless of network connectivity, the member node having membership in the network cluster regardless of network connectivity." The Examiner finds no enabling description indicating how a node that has no connectivity to the cluster would have the capability to access the shared repository. It

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would cause undue experimentation to one of ordinary skill in the networking art at the time invention was made to determine how to access a shared repository without having a connection to the network. On page 12 of Applicant's specification it implies states to determine the cluster definition for the network cluster a node would be required to have network connectivity wit the cluster. However, Applicant has yet to show how a node the does not have network connectivity to the cluster is able to obtain the definition. Again, it would cause undue experimentation to one of ordinary skill in the networking art at the time invention was made to determine how to access a shared repository without having a connection to the network.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. As to exemplary claim 1, the recitation "a means for accessing, by a member node, the cluster definition on the shared repository..." is unclear and vague as to which member node is accessing. Since one of the member nodes has been designated the coordinator nodes of the at least two member nodes. The Examiner will interpret this limitation to mean "the member node other than the selected coordinator node". Also, claim 1, states regardless of network connectivity. It is unclear as to network connectivity to what. The Examiner will interpret this limitation to mean connectivity to the shared repository.

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B. As to exemplary claim 46, the limitation “requesting a change to the cluster definition by sending a proposed change to the shared repository”, is unclear and vague as to which of the member nodes makes the request. The Examiner will interpret this limitation to mean “the member node other than the selected coordinator node”.

C. As to exemplary claim 53, the limitation, “directing a non-member to access the cluster definition on the shared repository”, is unclear and vague as to a member node directing a non-member to access the cluster definition on the shared repository. The Examiner will interpret this limitation to mean a selected coordinator node.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1, 5, 7-9, 11-13, 17, 19-21, 27, 29-33, 37, 39-41, 43, 45-47, 50 and 53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfieri et al. (Alfieri), U.S. Patent No. 5,666,486 in view of Lennie et al. (Lennie), U.S. Patent No. 6,092,213 and in further view of Slaughter et al. (Slaughter1), U.S. Patent No. 5,964,886.

10. Regarding **claim 1**, Alfieri discloses the invention substantially as claimed. Alfieri discloses *a method for maintaining a cluster definition for a network cluster having at least one member node* [see Alfieri, Col. 1, lines 57-67 and Col. 2, lines 1-64], *the method comprising: coupling each member node to a shareable repository* [see Alfieri, Col. 3, lines 33-54]; *storing a*

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cluster definition for the network cluster in the shareable repository [see Alfieri, Col. 3, lines 65-67 and Col. 4, lines 1-34]; *accessing, by each member node in the network cluster, the current cluster definition at the single location in the shared repository* [see Alfieri, Col. 18, lines 33-42]; *selecting a coordinator node from one of the member nodes of the network cluster* (Alfieri teaches a cluster master node for coordinating cluster activity), [see Alfieri, Col. 6, lines 23-30]; *a member node requesting a change to the cluster definition* [see Alfieri, Col. 4, lines 63-67, Col. 5, lines 1-43]. However, Alfieri does not explicitly disclose the coordinator node updating the cluster definition to reflect the requested change.

11. In the same field of endeavor, Lennie discloses (e.g., a computing system in the form of a cluster of a number of multiprocessing nodes). Lennie discloses the coordinator node updating the cluster definition to reflect the requested change [see Lennie, Col. 2, lines 65-67].

12. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Lennie's teachings of a computing system in the form of a cluster of a number of multiprocessing nodes with the teachings of Alfieri, for the purpose of offering high levels of fault tolerance and high availability in software via clustering [see Lennie, Col. 2, lines 21-34]. However, Alfieri-Lennie does not explicitly disclose accessing, by a member node, the cluster definition on the shared repository, regardless of network connectivity.

13. In the same field of endeavor, Slaughter1 discloses (e.g., highly available cluster virtual disk system). Slaughter1 discloses *accessing, by a member node, the cluster definition on the shared repository, regardless of network connectivity* [see Slaughter1, Col. 2, lines 50-67 and Col. 3, lines 1-13].

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14. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Slaughter's teachings of a highly available cluster virtual disk system with the teachings of Alfieri-Lennie, to purpose of providing a request to join and access by a potential member node because it allows nodes to be added to a cluster without suspension in operation. By this rationale **claim 1** is rejected.

15. Regarding **claim 5**, Alfieri-Lennie and Slaughter1 discloses *membership changes including a node joining a cluster and* [see Slaughter1, Col. 8, lines 46-47] *and each node of a cluster accessing the storage device of the cluster corresponding to a request for membership and accessing the cluster definition by a potential member node* [see Slaughter1, Abstract lines 1-3]. By this rationale **claim 5** is rejected.

16. Regarding **claim 7**, Alfieri-Lennie and Slaughter1 discloses *comprising: recovering from a failure of the coordinating node* [see Lennie, Col. 3, lines 10-14]. By this rationale **claim 7** is rejected.

17. Regarding **claim 8**, Alfieri-Lennie and Slaughter1 discloses wherein recovering includes: selecting a new coordinator node from the member nodes of the network cluster [see Lennie, Col. 3, lines 10-14], completing, by the new coordinator node, an update of the cluster definition to reflect the requested change if there is a set valid bit and an incomplete log file [see Lennie, Col. 6, lines 3-6] in the shareable repository [see Lennie, Col. 4, lines 14-18]. By this rationale **claim 8** is rejected.

18. Regarding **claim 9**, Alfieri-Lennie and Slaughter1 discloses *wherein completing an update includes: reading the incomplete log file* [see Lennie, Col. 6, lines 13-15]; *and continuing the update of the cluster definition from a point, as indicated by the incomplete log file, where*

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the coordinating node cease updating the cluster definition due to the failure of the coordinating node [see Lennie, Col. 3, lines 14-18, 38-40]. By this rationale **claim 9** is rejected.

19. Regarding **claim 11**, Alfieri-Lennie and Slaughter¹ discloses *an apparatus for updating a cluster definition for a network cluster having at least one member node, comprising: a shared repository coupled to each member node of the network cluster* [see Alfieri, Col. 3, lines 46-67], *the repository including the current cluster definition where each member node of the cluster accesses the current cluster definition at a single location in the shared repository* [see Alfieri, Col. 3, lines 64-66] *and a proposed change to the cluster definition to the current cluster definition sent to the shared repository by one of the member nodes* [see Alfieri, Col. 3, lines 65-67 and Col. 4, lines 1-2]; *and a coordinator node, selected from one or the member nodes of the network cluster, to update the current cluster definition with the proposed change* [see Lennie, Col. 2, lines 65-67]. By this rationale **claim 11** is rejected.

20. Regarding **claim 12**, Alfieri-Lennie and Slaughter¹ discloses a log file, indicating a progress of updating the cluster definition (Lennie teaches a master audit log), [see Lennie, Col. 3, lines 38-40]. By this rationale **claim 12** is rejected.

21. **Claim 13** is a product or manufacture claim corresponding to the apparatus claim 11; therefore claim 13 is rejected under the same rationale.

22. **Claim 17** list all the same elements of **claim 5**, but in computer program product form rather than method form. Therefore, the supporting rationale of the rejection to **claim 5** applies equally as well to **claim 17**.

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23. **Claims 19-21** list all the same elements of **claims 7-9**, but in computer program product form rather than method form. Therefore, the supporting rationale of the rejection to **claims 7-9** applies equally as well to **claims 19-21**.

24. **Claim 27** is substantially the same as claim 5 and is thus rejected for reasons similar to those in rejecting claim 5.

25. **Claims 29-31** are substantially the same as claims 7-9 and are thus rejected for reasons similar to those in rejecting claims 7-9.

26. **Claim 32** list all the same elements of claim 1, but in system form rather than method form. Therefore, the supporting rationale of the rejection to claim 1 applies equally as well to claim 32.

27. **Claim 33** is substantially the same as claim 1 and is thus rejected for reasons similar to those in rejecting claim 1.

28. **Claim 37** is substantially the same as claim 5 and is thus rejected for reasons similar to those in rejecting claim 5.

29. **Claims 39 and 40** are substantially the same as claims 7-9 and are thus rejected for reasons similar to those in rejecting claims 7-9.

30. **Claim 41** lists the same elements of claims 33, but in apparatus form rather than method form. Therefore, the supporting rationale of the rejection to claim 33 applies equally as well to claims 41.

31. **Claim 43** is substantially the same as claim 5 and is thus rejected for reasons similar to those in rejecting claim 5.

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32. **Claim 45** is substantially the same as claim 29 and is thus rejected for reasons similar to those in rejecting claim 29.

33. **Claim 46** is substantially the same as claim 1 and is thus rejected for reasons similar to those in rejecting claim 1.

34. **Claim 47** is substantially the same as claim 5 and is thus rejected for reasons similar to those in rejecting claim 7.

35. **Claim 50 and 53** are substantially the same as claim 1 and are thus rejected for reasons similar to those in rejecting claim 1.

Claim Rejections - 35 USC § 103

36. **Claims 2, 3, 10, 14, 15, 22, 23, 34, 36, 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alfieri-Lennie and Slaughter1 as applied to claims 1, 2, 3, 11, 13, 33, 41 above, and further in view of Slaughter et al. (Slaughter2), U.S. Patent No. 6,014,669.

37. Regarding **claim 2**, Alfieri-Lennie and Slaughter1 discloses the inventions substantially as claimed. However, Alfieri-Lennie and Slaughter1 does not explicitly disclose wherein requesting a change to the cluster definition includes: sending a proposed change to a scratch area; and setting a valid bit associated with the scratch area.

38. In the same field of endeavor, Slaughter2 discloses (e.g., a cluster configuration database). Slaughter discloses *wherein requesting a change to the cluster definition includes: sending a proposed change to a scratch area; and setting a valid bit associated with the scratch area* (Slaughter2 teaches local consistency records within the cluster configuration database of each member node to a specific area of the database and a flag is used to indicate the database

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has been restored to a corresponding valid bit. Also, Slaughter2 further teaches that the consistency record stores a checksum and length of the configuration database which is used to validate the local configuration database copy to ensure that the configuration database has not been corrupted), [see Slaughter2, Col. 10, lines 16-17, 64-67 and Col. 11, lines 1-13].

39. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated Slaughter2's teachings of a cluster configuration database with the teachings of Alfieri-Lennie and Slaughter1, for the purpose of surviving and recovering crashes by utilizing a scratch area and associated valid bit because they certify that the local cluster configuration of each member node is not corrupt. By this rationale **claim 2** is rejected.

40. Regarding **claim 3**, Alfieri-Lennie and Slaughter1, Slaughter2 discloses *wherein updating the cluster definition includes: verifying the valid bit* (Slaughter2 teaches checking validity), [see Slaughter2, Col. 10, lines 41-67 and Col. 11, lines 1-13]; *setting an update flag* [see Slaughter2, Col. 6, lines 21-26 and Col. 12, lines 10-11]; *modifying the cluster definition to reflect the requested change* [see Slaughter2, Col. 9, lines 25-27]; *logging a progress of modifying the cluster definition in a log file in parallel with modifying the cluster definition* [see Lennie, Col. 3, lines 2-7]; *incrementing a version number associated with the shareable repository* [see Slaughter2, Col. 9, lines 27-29]; *and clearing the valid bit and the update flag* (Slaughter2 teaches remove and update command corresponds to operations to performed on the synchronization command of which a flag may be set as indicia), [see Slaughter2, Col. 12, lines 21-23]. By this rationale **claim 3** is rejected.

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41. Regarding **claim 10**, Alfieri-Lennie and Slaughter1, Slaughter2 further teaches the step of: re-requesting, by the member node, the change to the cluster definition if after a period of time, the change is not made to the cluster definition.

42. **Claims 14 and 15** list all the same elements of **claims 2 and 3**, but in computer program product form rather than method form. Therefore, the supporting rationale of the rejection to **claims 2 and 3** applies equally as well to **claims 14 and 15**.

43. **Claim 22** is substantially the same as claim 10 and is thus rejected for reasons similar to those in rejecting claim 10.

44. Regarding **claim 23**, Alfieri-Lennie and Slaughter1, Slaughter2 discloses wherein the proposed change is stored in a scratch area of the shared repository [see Slaughter2, Col. 10, lines 16-67 and Col. 11, lines 1-13]. By this rationale **claim 23** is rejected.

45. **Claim 34** is substantially the same as claims 2 and are thus rejected for reasons similar to those in rejecting claims 2.

46. **Claim 36** is substantially the same as claim 10 and is thus rejected for reasons similar to those in rejecting claim 10.

47. **Claim 42** is substantially the same as claim 36 and is thus rejected for reasons similar to those in rejecting claim 36.

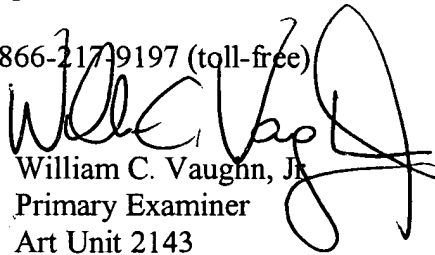
Conclusion

48. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Vaughn, Jr. whose telephone number is (571) 272-3922. The examiner can normally be reached on 8:00-6:00, 1st and 2nd Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)


William C. Vaughn, Jr.
Primary Examiner
Art Unit 2143

WCV